DOCUMENT RESUME

ED 296 709 IR 013 392

AUTHOR Valdez, Gilbert
TITLE Report to the Legislature on Educational Technology. Prepared in Accordance with Article 8.
INSTITUTION Minnesota State Dept. of Education, St. Paul.
PUB DATE 14 Jan 86
NOTE 19p.
PUB TYPE Legal/Legislative/Regulatory Materials (090) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Managed Instruction; *Courseware; *Educational Technology; *Education Service Centers; Elementary Secondary Education; Mastery Learning; *State Aid; *State Legislation
IDENTIFIERS *Minnesota

ABSTRACT

This report on the status of programs authorized under Article 8, "Technology and Educational Improvement," from July 1, 1983, through December 31, 1985, summarizes progress in areas addressed by each of 12 sections of the article: (1) Technology Utilization Plans; (2) Inservice Training for Technology Use; (3) Regional Coordinators; (4) Technology Site Designation; (5) Courseware Integration Centers; (6) Integration Center Designation and Grants; (7) Courseware Procurement, Criteria, Consultants, Evaluation Team, High Quality, and Disposition; (8) Subsidy for Purchase of Courseware Packages; (9) Purchase of Courseware Duplication; (10) Courseware Package Development; (11) Mastery Learning through Individualized Learning Plans Act; and (12) Computerized Mastery Management System. Information on statutory requirements, program status, and other comments are included for each program. (EW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED296709

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

REPORT TO THE LEGISLATURE

ON

EDUCATIONAL TECHNOLOGY

January 14, 1986

Prepared in accordance with Article 8.

Submitted by:

Gilbert Valdez, Ph.D, Manager
Curriculum and Technology Section
Minnesota Department of Education
(612) 296-4067

IR013392

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gilbert Valdez

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TABLE OF CONTENTS

	Page
Introduction	1
Section 13 [129B.33] [Technology Utilization Plans.]	3
Section 14 [129B.16] [Inservice Training for Use of Technology.]	3
Subdivision 4 [Statewide Inservice Training.]	4
Section 28 [129B.35] [Regional Coordinators.]	4
Section 29 [129B.36] [Technology Site Designation.]	5
Section 33 [129B.375] [Courseware Integration Centers.]	7
Section 55 [Integration Center Designation and Grants.]	7
Subdivision 4 [Recipient Duties and Use of Money.]	8
Subdivision 5 [Evaluation of Centers.]	8
Section 32 Minnesota Statutes 1984, Section 129B.37, Subdivision 1	9
Subdivision 2 [Procurement.]	10
Subdivision 3 [Criteria.]	10
Subdivision 4 [Consultants.]	10
Subdivision 5 [Evaluation Team.]	11
Subdivision 6 [High Quality.]	11
Subdivision 7 [Disposition.]	12
Section 34 [129B.38] [Subsidy for Purchase of Courseware Packages.]	12
Section 35 [129B.39] [Purchase of Courseware Duplication.]	13
Section 36 [129B.40] [Courseware Package Development.]	14
Section 37 [129B.61] [Mastery Learning Through Individualized Learning Plans Act.]	14
Section 59 [Computerized Mastery Management System.]	16

INTRODUCTION

In the last few years, Minnesota has rightfully received considerable national attention for its use of technology to enhance educational quality and opportunities. Numerous national publications including such prestigious magazines as "Educational Leadership," "NASSP Journal" and "U.S. News and World Report" have published feature-length articles detailing educational technology efforts in Minnesota. "Electronic Learning" and "Phi Delta Kappan" have also reported on Minnesota's efforts. Additionally, numerous national organizations have asked Minnesota educators to make presentations on the use of technology in education at their national conferences.

Minnesota was accustomed to receiving this kind of attention in relation to computers. What is different now is that Minnesota is also receiving national attention for its use of other technologies, e.g., two-way television and videodiscs. Recently, Minnesota has received attention for its efforts to integrate technology into the curriculum, especially to enhance thinking skills.

Analysis of why Minnesota has exerted such strong leadership in this area suggests that much of the credit can be attributed to legislative decisions. The creation of the Minnesota Educational Computing Corporation (MECC) was a major reason Minnesota led the nation in the early use of computers in education. The passage and funding of "Article 8 - Technology and Educational Improvement" enabled Minnesota to continue to lead in this area during the past few years.

Overall, this report to the Legislature on the status of educational technology efforts authorized under Article 8 is quite positive. However, there were some problems. The most significant was the lack of inservice funds. During the two previous years, educators had improved their skills and were ready for advanced applications. That enthusiasm was necessarily tempered because appropriate learning opportunities were reduced significantly.

In some cases, the volume and amount of work associated with particular components of the legislation proved greater than anticipated. Evaluation of courseware is the most significant example. The number, complexity and size of packages received far exceeded estimates. Courseware evaluations continue to be backlogged.

In other cases, technology efforts authorized under Article 8 have had even more significant results than originally envisioned. For example, some technology demonstration sites exceeded expectations in number of products, visitors and replications. Over 15,000 people have visited the technology sites and 16,000 have participated in technology site-sponsored workshops, presentations, or assistance. No one could have envisioned that after three years, 250 school districts would be interested in two-way television. Presently, there are 77 school districts using two-way television and 13 more are in the installation phase. The other 160 school districts are in various stages of planning for technology. A sad reality is that additional cooperative efforts by the 90 districts that already have purchased initial hardware and the 160 districts that would like to purchase the necessary equipment may have to be delayed because of one-time start up costs.

It is important that we acknowledge that the purpose of technology is to enhance the quality of education and provide additional learning opportunities for our students, rather than to dazzle people with hardware. The quality of education and learning opportunities have already been helped by technology. For example, students in small school districts that before could not take even one foreign language class can now select from three languages at some of our two-way television sites.

Everyone involved also needs to recognize that the easiest part of this effort is learning to use machines. Our attempts to appropriately integrate the technology into the curriculum and to use this equipment to be more creative, productive, and thoughtful will be far more challenging. Future inservice efforts in the use of technology need to incorporate proven curriculum and learning theories and practices if the workshops are to have long-term value. Inservice funds and exemplary demonstration locations are absolutely crucial if we are to continue making progress on appropriate uses of technology.

The overarching conclusion of this status report is that many positive things are underway. However, this progress could be dramatically slowed without further support of the governor and the Legislature. Most educators recognize that technology can help enhance education and are attempting to incorporate appropriate use of technology into their instructional efforts. They would be the first to acknowledge that continued legislative support is crucial.

This legislative report is a status report covering the time period from July 1, 1983 to December 31, 1985. As required, a comprehensive evaluation relating to student gains, teacher attitudes and other elements will be presented to the Legislature on February 1, 1987.

ARTICLE 8 TECHNOLOGY REPORT

SECTION 13 [129B.33] [TECHNOLOGY UTILIZATION PLANS.]

Requirement

Each school district is encouraged to develop and adopt, as part of its educational policy, a written technology utilization plan in consultation with the Planning, Evaluation, and Reporting Law (PER) Committee. The Minnesota Department of Education...shall develop model plans and criteria. A school district that applies for aid to develop a technology plan shall receive 75 cents per student (ADM) or a minimum of $500.

Status

Ninety-seven percent of the districts applied for planning money and 98.3 percent of the appropriated funds ($640,399 of $650,000) were distributed.

Comments

With the exception of one middle-sized district, those not using their allocations were small school districts. Numerous offers of assistance were not acknowledged because of time constraints by staff with many different responsibilities.

SECTION 14 [129B.16] [INSERVICE TRAINING FOR USE OF TECHNOLOGY.]

Requirement

School districts may apply for state aid for the amount of $1 multiplied by the average daily membership (ADM). Applications shall contain a specific inservice training proposal and shall have an approved technology utilization plan.

Status

Ninety per cent (390 of the 434 districts) had their inservice plans approved and received the appropriate aid as defined in law. Ninety-seven percent ($701,000 of the $716,000) of the appropriation was paid out.

Comments

Legislation required that school districts have an approved technology utilization plan before they could receive technology inservice funds. The three percent of the districts that did not receive funds were unable to develop acceptable plans by the deadline specified in law. Small districts again indicated that the funds available were insufficient for devoting scarce personnel resources.

Subdivision 4 [STATEWIDE INSERVICE TRAINING.]

Requirement

The Department of Education shall provide for supplemental regional or statewide inservice training for district staff or technology use by June 30, 1985.

Status

These funds received tremendous leverage because they were used in conjunction with 25 professional organizations, departments, MECC and Educational Cooperative Service Unit (ECSU) staff.

Nearly 9,000 educators attended workshops partially or fully funded by these funds. Equally important is the participation of the 25 professional organizations which allowed for assessment, involvement and ownership by classroom teachers and building administrators. Approximately 30 percent of the workshops concerned awareness or planning, while the remaining 70 percent concentrated on content-specific needs and courseware.

Comments

The professional organizations were pleased that they were able to offer technology inservice opportunities to their members. Likewise, they were disappointed when they learned that these inservice funds had been cut. Leaders of the professional organizations noted that the inservice opportunities had given them a sense of community with their colleagues. Evaluations for all the inservice opportunities have been very high. Teachers value these opportunities to increase their skills.

SECTION 28 [129B.35] [REGIONAL COORDINATORS.]

Requirement

The Department of Education shall contract to provide regional instructional computing coordinators with expertise in the use of technology in education. The Department and school districts within an ECSU region shall agree on the services to be provided by the regional coordinators.

Status

The Department of Education shall contract to provide regional instructional computing coordinators with expertise in the use of technology in education. The Department and school districts within an ECSU region shall agree on the services to be provided by the regional coordinators.

The following is a list of the successful applicants, the name of the coordinator and the chair of the technology coordinator committee for each region.

Regions 1 & 2 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Duane Loewen, Moorhead
Chair: Doug Sorenson, Warren

Region 3 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Dennis Chretien, Virginia
Chair: Larry O'Brien, Grand Rapids

Region 4 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Duane Loewen, Moorhead
Chair: Robert Jernberg, Moorhead

Region 5 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Will Jokela, St. Cloud
Chair: Jay Spillum, Little Falls

Regions 6 & 8 - Southwest and West Central ECSU

Coordinator: John Arneson, Marshall
Chair: Jim Christenson, Willmar

Region 7 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Will Jokela, St. Cloud
Chair: Mary James, Maple Lake

Region 9 - South Central ECSU

Coordinator: Paul Musegades, Mankato
Chair: Dr. Jerry Olson, St. Clair

Region 10 - Minnesota Educational Computing Corporation (MECC)

Coordinator: Dick Carlstrom, Rochester
Chair: Mahlon Wissink, Rochester

Region 11 - Minnesota School Districts Data Processing Joint Board (TIES)

Coordinators: Marla Davenport, Sheldon Ramnarine, Roseville
Chair: Bob Peterson, Bloomington

Comments

The Department of Education received a minimum of two and a maximum of four proposals per region. Longstanding funding formulas divide regional money into eleven amounts that consider population and geographical distances. Regional committees awarded six of the eleven amounts to MECC.

SECTION 29 [129B.36] [TECHNOLOGY SITE DESIGNATION.]

Requirement

By July 1, 1985, the Commissioner of Education, in consultation with the advisory committee, shall designate which of the existing technology demonstration sites are

eligible for continuation grants for use during the 1985-1986 and 1986-1987 school years. A site that does not receive a continuation grant may retain its designation as a technology demonstration site during the 1985-1986 and 1986-1987 school years to improve its opportunities to obtain funding from private or other public sources. The commissioner, in consultation with the advisory committee, shall determine the level of funding for each site. A grant shall be at least $125,000 but not more than $175,000. The amount of $125,000 of each grant may be used to continue existing operations. Any grant amount exceeding $125,000 may be used for the expenses of expanded efforts already planned or underway at the site. Grantees must continue matching the grant award in the manner agreed for the period from July 1, 1983, to June 30, 1985.

Status

Thirteen of the original 15 technology sites were designated eligible for continuation grants. All 15 chose to retain their technology site designation. During the 1985 legislative session, the Legislature designated an additional five technology sites and specified appropriations for each of the five. The following amounts were allocated to each of the 20 sites:

Technology Site Funding

SITE	BASIC	PROGRAM	TOTAL
BITS	$ 125,000	$ 26,000	$ 151,000
BEACON	125,000	27,000	152,000
DDD	125,000	20,000	145,000
ECMECC	125,000	26,000	151,000
High Technology Coop.	125,000	40,000	165,000
Hopkins [1]	125,000	15,000	140,000
In-Tech	125,000	25,000	150,000
KIDS [2]	--	--	--
Minneapolis	125,000	25,000	150,000
Minnesota Valley	125,000	12,000	137,000
Northeast Consortium	125,000	12,000	137,000
Shakopee [3]	125,000	10,000	135,000
SMART	125,000	5,000	130,000
TLC	125,000	7,000	132,000
Woodland Cooperative [2]	--	--	--
Four Sibley County Schools [4]	150,000	--	150,000
Mid-State Ed. Coop. [4]	130,000	--	130,000
SW MN Telecommunications [4]	200,000	--	200,000
Sherburne-Wright Ed. Coop. [4]	130,000	--	130,000
	$ 2,235,000	$ 250,000	$ 2,485,000

1 - Will have extensive involvement with Mastery Learning project.

2 - Evaluation limited to comparisons of interactive TV and regular classes and not of project.

3 - Extensive evaluation will take place using funds from basic grant.

4 - Appropriations set by law.

The following are a listing of services provided by the individual technology site:

TECHNOLOGY SITE	PRODUCTS	PROMOTIONAL ITEMS	VISITORS	PARTICIPANTS	TOTAL CONTACTS
BITS	28	31	349	1,532	1,881
BEACON	10	16	847	1,170	2,017
DDD	10	1	1,672	995	2,667
ECMECC	2	1	1,347	850	2,197
High Technology Coop.	2	1	117	593	593
Hopkins	17	2	1,358	2,684	4,042
In-Tech	108	2	2,580	2,340	4,920
KIDS	3	1	806	310	1,116
Mid-State Ed. Coop. *	0	0	0	0	0
Minneapolis	35	1	1,086	740	1,826
Minnesota Valley	4	1	2,120	1,111	3,231
Mounds View *	0	0	0	0	0
Northeast Consortium	10	1	1,243	980	2,223
Shakopee	6	2	1,039	885	1,924
Sherburne-Wright Ed. Coop.	0	0	156	260	416
Four Sibley County Schools	0	0	0	0	0
SMART	12	0	0	980	980
SW MN Telecommunications	0	0	0	0	0
TLC	11	2	266	165	431
Woodland Cooperative	4	1	263	860	1,123
TOTALS	**262**	**63**	**15,249**	**16,455**	**31,587**

* - NEW SITE

Comments

Most of the technology sites have been very successful. The two sites that had difficulty the first year now have successful programs. The number of visitors and participants from outside the districts has been extremely gratifying. Approximately 9,000 of the 15,249 visitors were from other districts. Similar ratios are true for participation in technology site workshops. Detailed statistics on products and services are available for each site.

SECTION 33 [129B.375] [COURSEWARE INTEGRATION CENTERS.]

SECTION 55 [INTEGRATION CENTER DESIGNATION AND GRANTS.]

Requirement

The Commissioner of Education shall establish educational courseware integration centers to provide 1) access for teachers to major exemplary courseware, 2) opportunities for teachers to become familiar with a variety of technology resources, and 3) assistance in integrating technology materials into the curriculum.

The Commissioner of Education shall designate and award grants to four courseware integration centers established under section 33. Two centers shall be model media centers at permanent locations and two shall be mobile centers. The commissioner shall assure access by all regions of the state when designating centers.

The commissioner shall award a grant for each courseware integration center by January 15, 1986, for use during the 1986-87 school year. Applications for grants must be submitted to the commissioner by December 1, 1985, in the form and manner determined by the commissioner.

Status

Criteria, including those required in statute, were developed in consultation with the technology advisory committee. A letter from the Commissioner of Education, the criteria and application forms were mailed to superintendents, principals and media specialists on September 30, 1985.

Fifteen proposals were received for courseware integration centers. The technology advisory committee scored and rated the proposals during December 1985. The following recommendations were forwarded to the Commissioner of Education for her action:

Model Media Centers:	Brainerd Public Schools Minneapolis Public Schools
Mobile Centers:	Bemidji Public Schools New Ulm Public Schools

Comments

Both mobile integration center sites call for sharing responsibility for workshops with the area's regional technology coordinators.

Subdivision 4 [RECIPIENT DUTIES AND USE OF MONEY.]

Requirement

A grant recipient shall work cooperatively with the advisory committee, the Department of Education, higher education institutions in the area, and business and industry, as appropriate. The recipient, using grant money, shall conduct at least four workshops during the school year of the grant to demonstrate to districts and interested parties its use of techniques for curriculum integration and ongoing opportunities for courseware review.

Status

All grant recipients made a commitment to cooperate with the specified groups, to conduct at least four workshops during the grant period and have plans for demonstrating courseware integration providing ongoing opportunities for courseware review.

Subdivision 5 [EVALUATION OF CENTERS.]

Requirement

The advisory committee shall evaluate the courseware integration centers. It may contract with independent evaluators for this purpose.

Status

The technology advisory committee will be developing evaluation procedures and incorporating them into the grant agreements for the courseware integration centers.

SECTION 32 MINNESOTA STATUTES 1984, Section 129B.37, Subdivision 1, Courseware Evaluation, is amended to read:

Requirement

Subdivision 1 [LIST.] The Department of Education shall compile, publish, and distribute to districts a list of high quality courseware packages for use in public elementary and secondary schools. Every six months, the Department shall supplement the list with recently evaluated materials.

Status

Five "High Quality Courseware" lists have been distributed.

Publication Date	Number of Programs
February 1984	70
March 1984	99
September 1984	99
February 1985	100
November 1985	262

Comments

Currently, there are 84 programs evaluated and ready to be included in the spring 1986 list. More than 1,000 programs are in the evaluation process. One copy of the list has been distributed to every public school building and media director and two copies sent to each superintendent. Because of the increased size and expense of printing and distributing the document, only one copy of the November 1985 issue was sent to superintendents. The large number of evaluations and the desire to make the lists more valuable required us to rethink our delivery system. The Department of Education has developed, and many schools are now using, an electronic database that allows schools to research materials by 27 categories. Sample categories include grade level, application, subject area, unit topics, and highest rating.

Minnesota educators have been informed that the courseware list is available on a database stored in the computer housed at the Minnesota Land Management Information Center. Schools may gain access to the information by using a telephone and a modem connected to a microcomputer. Our long-range plan is to use only the electronic access because it gives better service to educators in the schools at lower costs.

Subdivision 2 [PROCUREMENT.]

Requirement

The Department shall obtain courseware packages for evaluation by notifying publishers and inviting them to submit their materials.

Status

The Department has been in contact with approximately 600 courseware producers and received more than 2,000 programs ranging in value from $9.95 to $3,300. An estimated 700 new programs were received during the 1985-86 school year.

Comments

Additional producers are in contact with the Department regarding submitting their programs for review. Thus, courseware in ever-widening curricular areas is being received. This is particularly true in the business, industrial arts and world languages content areas.

A new type of instructional material is now being submitted to the Department for review. These are videodiscs which either stand alone or use an interface with a computer. Increasing interest is being expressed by Minnesota educators in using these materials.

Subdivision 3 [CRITERIA.]

Requirement

The Minnesota State Board of Education shall develop and adopt criteria and procedures for evaluating courseware packages, in consultation with the Department, advisory committee and appropriate regional management information centers.

Status

The State Board of Education adopted procedures and criteria to evaluate instructional courseware at its meeting on September 13, 1983. The Board adopted criteria to evaluate test making, teacher utility, counseling and library cataloging programs at its meeting on November 14, 1984.

Comments

There have been numerous requests for copies of these evaluation forms from educators in other states.

Subdivision 4 [CONSULTANTS.]

Requirement

The Department may employ consultants to evaluate courseware packages and pay them fees based on the size and complexity of the courseware packages involved.

Status

The Department has, from time to time, employed teams of consultants to conduct initial screening of courseware packages before they were field-tested. These consultants represented teachers' organizations as well as subject area groups.

Subdivision 5 [EVALUATION TEAM.]

Requirement

The evaluation team for each courseware package shall include at least five persons. Among them will be three practicing teachers from appropriate grade levels or content areas who will field-test the courseware packages in their classrooms, one microcomputer professional knowledgeable in software and documentation techniques and one curriculum content expert from the Department.

Status

More than 1,500 Minnesota teachers and technology professionals have helped evaluate courseware.

Comments

Teachers and technicians receive a small stipend to compensate them for helping evaluate courseware. Many teachers have commented that participating in this activity provides great inservice and learning opportunities, by allowing them to review the latest materials.

Subdivision 6 [HIGH QUALITY.]

Requirement

Based on the reports submitted by evaluation team members and the criteria and procedures adopted by the State Board, the Department shall determine whether the courseware package qualifies as high quality.

Status

High quality courseware packages are identified by averaging reviewers' scores and applying weight factors.

Comments

Evaluative data obtained from Minnesota educators is routinely compared with data gathered from other state and national agencies and journals and consistently found to be similar. Several agencies, national in their scope, have either curtailed in more groups seeking evaluation results from Minnesota.

Subdivision 7 [DISPOSITION.]

Requirement

The Department shall maintain a collection of the courseware packages evaluated as high qu :y.

Status

All courseware received is in the field being evaluated or shelved in a library at the Department of Education.

Comments

Space is a critical problem. At the rate courseware is being donated for review, there will not be room to shelve it. The "High Quality Courseware" collection is being used in three ways:

1) Districts are sending teachers to the Department to preview materials before purchasing courseware. This is occurring more frequently during school vacation periods.

2) Districts and ECSUs are requesting that large numbers of the collection be brought to their inservice sessions for educators to examine.

3) State Department staff use portions of the collection in their inservice sessions as a means of encouraging teachers to increase their microcomputer use.

Once the four Courseware Integration Centers become operational and they begin to use the "High Quality Courseware" collection, the collection will be better utilized and storage problems will be less severe.

SECTION 34 [129B.38] [SUBSIDY FOR PURCHASE OF COURSEWARE PACKAGES.]

Requirement

A district that purchases or leases courseware packages that qualify as high quality shall receive the lesser of 50 cents a year per student times the number of pupils, or 25 percent of the actual expenditures. (The previous biennium allocation was $1.60 per student.)

Status

The results of the courseware subsidy was the single disappointing technology component. Over a third of the available aid was not claimed by districts. Three communications were sent to districts notifying them of the existence of these funds. Districts that sent in the required verification were reimbursed as specified in Section 34.

Comments

The reasons given for not submitting aid requests were that districts were not aware of the funding, that the accounting procedures for small items required too much record keeping and that there were insufficient numbers of products on the high quality list. Legislative modifications of the law now allow peripherals and package updates to be included in the reimbursement and there are many more products on the list. This should significantly reduce past problems. Many school people have suggested that the courseware subsidy funds should be used to purchase additional "state rights" to high quality materials rather than attempting to pay 25 percent reimbursements on numerous small items.

SECTION 35 [129B.39] [PURCHASE OF COURSEWARE DUPLICATION.]

Requirement

Rights to duplication of courseware packages may be purchased, and volume purchase agreements may be established by the Department of Education, if the Department determines that the courseware packages are available to the state at a lower cost than if purchased by school districts.

Status

Rights to 23 video programs that provide 386 lessons have been purchased. The titles of the programs are:

TITLE	Number of Lessons	Length of Film Per Lesson
All About You	30	15
Best of Cover to Cover 2	16	15
Book Bird	16	15
Reading Approach to Math	7	20
Shakespeare on Stage	8	15
Start Here: Adventures in Science	12	25
Storybound	16	15
Truly American	32	20
Under the Blue Umbrella	16	15
Under the Yellow Balloon	16	15
What's in the News	30	15
Child Sexual Abuse	4	20
Inside/Out	15	30
Math Works	15	28
Art of Learning	20	6
Musical Encounter	30	6
Sounds Abound	15	32
Reading Motivation Series	10	11
Energy Flow	10	6
Homeostasis	10	6
Wave Particle Duality	10	6
Art Maker	32	15
Finding Our Way	16	15

Rights to computer materials in the following areas have been purchased: middle school mathematics, algebra I, algebra II, trigonometry, geometry, thinking skills and problem solving, economics and keyboarding. Reduced cost materials for Spanish I and German I and additional thinking materials were also purchased.

Comments

The cost effectiveness of these funds is truly remarkable. By working through consortiums of other states, courseware can be purchased with full duplication rights at five to ten percent of its developmental costs. State rights purchases from commerical producers usually require only 100 to 200 duplications to recover the state rights costs. Often, one large district will make that many copies for its own staff.

SECTION 36 [129B.40] [COURSEWARE PACKAGE DEVELOPMENT.]

Requirement

The Department of Education may contract with various organizations, commerical or nonprofit, for the design and development of courseware packages which will meet the needs of school districts and which otherwise are unavailable or too expensive for individual districts or the state to purchase.

Status

This is a new program which began in July of 1985, when direct funding to MECC for courseware development was transferred to the Department. This change was necessary because MECC became a corporation. Four contracts have been processed. The titles, amounts and the contractors are:

Dataquest Composer	$25,000.00	MECC
Elements of Effective Instruction Using Technology	$50,000.00	MECC
Rules of the Road	$23,000.00	St. Cloud State University
Computer Assisted Project - Physical Education	$40,000.00	Bloomington Public Schools

SECTION 37 [129B.61] [MASTERY LEARNING THROUGH INDIVIDUALIZED LEARNING PLANS ACT.]

Requirement

The purpose of this legislation is to:

1) Offer mastery learning programs in reading (K-3) that take into account entry reading levels.

2) Provide design models of individual pupil learning plans that demonstrate use of mastery management.

3) Encourage continuous progress that uses variable class-size groupings.

4) Recognize that sequential, measurable learning can occur in a program planned, taught, and managed for mastery.

School districts were encouraged to develop plans for a mastery learning program and submit a preliminary proposal. Preliminary proposals were accepted in either the exemplary start up or differentiated staffing funding category designated in law. From these proposals, 25 finalists were selected to submit detailed plans for implementing a demonstration program in mastery learning. Although there are opportunities for a wide range of optical components, the detailed plans must include the design and mandatory components defined in legislation. Based on selection criteria including quality, geography, and funding category, ten districts will be selected as demonstration sites by March 15, 1986, and granted awards of $125,000 for implementing their program plans.

Status

In early September, a 15-member advisory committee was selected to assist in implementing the legislation. This committee developed criteria and procedures for preliminary proposals and their submission. Ninety-three districts submitted preliminary proposals. On October 15, 1985, Commissioner Randall, following the recommendations of the advisory committee, selected the 25 districts which should submit detailed proposals for implementing demonstration programs of mastery learning. Letters were sent to all proposal writers informing them of the 25 sites selected. The advisory committee met several times and developed three application forms to correspond to the three funding categories. A proposal writing seminar for the 25 finalists was held November 14, 1985, to provide specific and consistent information to all the proposal writers. Expectations of being a demonstration site, elaboration on the application forms, and the selection process were defined for the participants.

Comments

The advisory committee used a dual system for narrowing the 93 proposals to 25 finalists. In addition to average scores and a numerical ranking, the evaluation teams also were asked to provide a team ranking of the proposals in each funding category (i.e., seven out of eight readers ranked a specific proposal in the top 14 of the exemplary category).

The primary goals of the final proposals are to determine:

- Understanding of the mastery learning process
- Definition of a plan which provides for individual learning needs

There have been few problems in administering this program to this point. It is unfortunate that there will be eighty-three proposals that will not be funded, especially since the quality of the preliminary proposals was very high.

There are at least three issues that the legislature may wish to consider.

Should the Legislature encourage schools to:

1) Expand mastery learning to 4-12?

2) Expand mastery learning into other content areas?

3) Expand expectations in all content areas to include greater attention to thinking skills?

If the Legislature determines this program should expand, it will need to consider whether it wishes to designate demonstration funding in those areas.

SECTION 59 [COMPUTERIZED MASTERY MANAGEMENT SYSTEM.]

Requirement

The Department of Education shall develop, contract for the development, or purchase the state rights to a computerized mastery management system that may be utilized for individualized learning plan models to be implemented under sections 38-42. The computer models shall have a common management system and be able to utilize several banks of learner outcomes and objectives that reflect content found in major textbooks. The Department shall also develop, contract for the development, or purchase the state rights to support and resource materials to be used in conjunction with the computerized mastery management system for reading. In future years, the Department is encouraged to develop and acquire a similar system and supporting materials for mathematics.

Status

To provide Minnesota schools with a management system, the Department has purchased the rights to the Houghton Mifflin Computer Management System. This system was developed by the Hopkins Public Schools and is owned by Houghton Mifflin Company. It has been used with great success in schools throughout the country.

This computer management system is a computerized test scoring and record keeping tool that provides educators a means of determining, recording and reporting student level of achievement of pre-defined instructional objectives. The system may be used in whichever subject areas and grade levels the districts feel are appropriate.

The Department is making the management system, normally purchased at $500 per subject area per building, available at no charge to Minnesota school districts. One copy of the management system will be sent on request to each district. Districts may make as many copies as they need for school use, pursuant to Minnesota law.

To assist educators in using the management system, the Department will provide inservice training at two levels, awareness and implementation/application, in each ECSU region.

Comments

Three weeks after announcing this product, 244 school districts have requested the management system. It is clear that Houghton Mifflin, Scott Foresman and Ginn are three of the five basal systems most used in Minnesota. We are now surveying to determine which other two series should be considered.